

**ABSTRACT OF THE DISCLOSURE**

The present invention provides a technique for forming extremely thin insulation layers requiring the incorporation of specified amounts of nitrogen, wherein the effect of nitrogen variations across the substrate surface may be reduced in that during and/or after the 5 nitrogen incorporation an oxidation process is performed. The nitrogen variations lead to a nitrogen concentration dependent oxidation rate and, hence, a nitrogen concentration dependent thickness variation of the insulating layer. In particular, the threshold variations of transistors including the thin insulating layer as a gate insulation layer may effectively be reduced.